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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,951	07/17/2003	Mark Allen Grubbs	AUS920030463US1	1546

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EXAMINER

LU, CHARLES EDWARD

ART UNIT	PAPER NUMBER
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2161

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/621,951	Applicant(s) GRUBBS ET AL.	
	Examiner Charles E. Lu	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants arguments have been fully considered. An appeal conference was conducted, and led to a decision that the application is premature for appeal. As such, the finality of the Office Action dated 7/21/2006 is withdrawn.

2. Claims 1-20 are pending.

3. Claims 1-20 are rejected.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 4-5, 7-8, 11-12, 14-15, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duchamp ("Optimistic Lookup of Whole NFS Paths in a Single Operation") evidenced by Kleiman ("Vnodes: An Architecture for Multiple File System Types"), in view of Sinha (U.S. Patent 5,437,029) of record, further in view of Applicant Admitted Prior Art (AAPA).

As to claim 1, Duchamp teaches the following claimed subject matter:

Determining at least one file system object in a file system upon mounting the file system at a mount point (2.2.2) on a computer system (2.1, 2.2), each file system object having a pathname and an inode (Abstract, 2.1), the inode for locating the file system object on a storage system (sec. 1, 2); Note from Kleiman that a vnode is a file system-independent inode (Kleiman, p. 2). Kleiman was not cited as prior art, but only as evidence that a "vnode" is well-known in the art as reading on the inode as claimed.

Entering the path name of the at least one file system object into a memory system (2.1);

Cross-referencing the path name of the at least one file system object in the memory system with its inode thereby enabling the inode to be obtained with one memory access (Abstract, 2.1).

Duchamp does not expressly teach "inode number".

However, Applicants admit, "an inode is identified by a unique number called an inode number" (p. 1, l. 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duchamp with the above, such that in a lookup cache above the path is cross-referenced to the inode number. The motivation would have been to successfully access a file by using an identification number of the inode.

Duchamp as applied above does not expressly teach a "frequently accessed object."

However, Sinha teaches allowing a user to specify a frequently accessed object (col. 7, l. 26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Duchamp with the above, such that frequently accessed objects specified by the user are additionally determined. The motivation would have been to allow the user to customize file system performance as taught by Sinha (col. 8, ll. 24-30).

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As to claim 4, Sinha as applied above further teaches wherein determining includes the step of obtaining the path name from a user (see above). Furthermore, it is noted that Duchamp must obtain a path name from a user to store the path name (e.g., 2.1).

As to claim 5, Duchamp as applied above further teaches wherein determining includes monitoring accesses to a file system object within a certain time span (2.2.4)

As to claim 7, Duchamp as applied above further teaches wherein a path name of a file system object and its cross-referenced inode number is removed from the memory system when a user so ordered (see e.g., 2.2.4). Furthermore, it is noted that Sinha as applied above also teaches or suggests the claimed subject matter (e.g., col. 8, ll. 8-15).

Claims 8, 11-12, 14-15, and 18-19 are drawn to substantially the same subject matter as claims 1, 4-5 and 7, discussed above.

5. Claims 6, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duchamp ("Optimistic Lookup of Whole NFS Paths in a Single Operation") evidenced by Kleiman ("Vnodes: An Architecture for Multiple File System Types"), in view of Sinha (U.S. Patent 5,437,029) of record, further in view of Applicant Admitted Prior Art and further in view of Stern ("SysAdmin : A file by any other name").

As to claim 6, Duchamp, Sinha and AAPA as applied above do not expressly teach wherein the path name and its cross referenced inode number are removed from

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the memory system when the file system containing the file system object is unmounted.

However, Stern teaches that unmounting a file system purges the entries of a lookup cache (p. 4). Duchamp and Sinha are both drawn to lookup caches, as seen above, and as modified above, the lookup cache contain frequently used path names and their inode numbers.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duchamp, Sinha, and AAPA with the above, such that the cache is purged when the file system is unmounted (and perform the claimed subject matter). The motivation would have been to clean up the memory system, since the cache entries would be invalid when the file system is unmounted.

Claims 13 and 20 are drawn to substantially the same subject matter as claim 6, discussed above.

6. Claims 2-3, 9-10, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duchamp ("Optimistic Lookup of Whole NFS Paths in a Single Operation") evidenced by Kleiman ("Vnodes: An Architecture for Multiple File System Types"), in view of Sinha (U.S. Patent 5,437,029) of record and further in view of Applicant Admitted Prior Art and further in view of Nevarez (U.S. Patent 5,499,358).

As to claim 3, Duchamp, Sinha and AAPA as applied above teaches a mounted file system as discussed above, but do not expressly teach an extended attribute file being associated with the mounted file system.

However, Duchamp teaches an extended attribute file in a file system (figs. 1-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Duchamp, Sinha and AAPA with the above, such that an extended attribute file is associated with the mounted file system. The motivation would have been to allow file system administrators to easily manage files and directories in a computer environment through the extended attributes, as taught by Nevarez (col. 5, ll. 6-11).

Duchamp, Sinha, AAPA, and Duchamp as applied above do not expressly teach obtaining from an extended attribute file a list of pathnames to be entered into the memory system.

However, in Sinha, there could be several file system objects (e.g., files) that the user desires to enter into the memory system (col. 7, ll. 20-29). As discussed by Sinha, file system objects comprise pathnames (e.g., Sinha, col. 7, ll. 40-50).

Furthermore, Nevarez teaches storing a database of user-defined data in the extended attributes of a file system (Abstract, Summary), and using this database to manage file system objects that have been tagged by a user (col. 4, l. 50 – col. 5, l. 32). For example, directory names matching a tag can be obtained (col. 5, ll. 1-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duchamp, Sinha, and AAPA with the above, such that a list of pathnames to be entered into the system is obtained from the extended attribute database discussed above, the database storing user-tagged information to facilitate management of files and directories as discussed above. The

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motivation would have been to allow file system administrators to easily manage files and directories in a computer environment through the extended attributes, as taught by Nevarez (col. 5, ll. 6-11), for the files to be entered into the system in Sinha (col. 7, ll. 20-50).

As to claim 2, the combination as applied above would further teach or suggest wherein the pathnames in the extended attribute file are relative to the mount point, at least because the file system was discussed above as being mounted on a mount point, and paths are shown in Duchamp as relative to the mount point (see above, Duchamp, 2.2.2).

Claims 9-10, and 16-17 are drawn to substantially the same subject matter as claims 2-3, discussed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached at (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Assistant Examiner
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4/10/2007

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